

What is claimed is:

1. A target object inspection system comprising:
  - a first detector for detecting radiation from a radiation source;
  - a second detector for detecting radiation from the target object;
  - a mobile platform including the first detector, the second detector and the radiation source; and
    - a boom connected to the radiation source and the mobile platform, wherein the boom is deployed so as to effect passage of the target object between the radiation source and the first and second detectors.
2. The system according to claim 1, wherein the first detector is a photon detector.
3. The system according to claim 1, wherein the second detector is a neutron detector.
4. The system according to claim 1, wherein the first detector detects radiation from the radiation source after the radiation passes through the target object.
5. The system according to claim 1, wherein the radiation source is a gamma radiation source.
6. The system according to claim 3, wherein the neutron detector comprises at least one helium detector.
7. The system according to claim 2, further comprising:
  - a counter for discretely counting photons received by the first detector; and
  - a display responsive to the counter for generating a display of the target object in response to the counter.
8. The system according to claim 3, further comprising an indicator for indication the presence of neutrons.
9. A dual-mode system for inspecting a target object comprising:
  - a radiation source;
  - a first detector and a second detector; and
  - an image processor coupled to the first detector and the second detector;

wherein when the dual-mode system is operating in a first active mode for imaging a target object, the radiation source directs radiation at a target object, the

radiation is detected by the first detector, and the image processor images the target object based on an output of the first detector; and

further wherein, when the dual-mode system is operating in a second passive mode for imaging a target object, the target object is scanned by the scanned detector for radiation that is emitted by the target object, the emitted radiation from the target object is detected by the second detector, and an indicator indicates the presence of the emitted radiation from the target object based on an output of the second detector.

10. The dual-mode system according to claim 9, wherein the first detector is a photon detector.

11. The dual-mode system according to claim 9, wherein the second detector is a neutron detector.

12. The dual-mode system according to claim 11, wherein the neutron detector comprises at least one helium detector.

13. The dual-mode system according to claim 10, further comprising:  
a counter for discretely counting photons received by the first detector; and  
a display responsive to the counter for generating a display of the target object in response to the counter.

14. The dual-mode system according to claim 11, wherein the indicator indicates the presence of neutrons.

15. A method for inspecting a target object comprising:  
directing radiation from a radiation source at the target object;  
detecting the radiation from the radiation source at a first detector;  
scanning the target object with a second detector; and  
indicating the presence of an emission from the target object with the second detector.

16. The method according to claim 15, wherein the steps of directing radiation, detecting the radiation and scanning the target object occur approximately simultaneously.

17. The method according to claim 15, wherein the presence of an emission is indicated by a light.

18. The method according to claim 15, wherein the presence of an emission is indicated by a sound alarm.

19. The method according to claim 15, further comprising passing the target object between the radiation source and the first and second detectors.

20. The method according to claim 15, wherein the first detector is a photon detector.

21. The method according to claim 15, wherein the second detector is a neutron detector.

22. The method according to claim 21, wherein the neutron detector comprises at least one helium detector.

23. The method according to claim 20, further comprising:  
discretely counting photons received by the first detector; and  
generating a display of the target object in response to discretely counting the photons received by the first detector.